



## 6-1 Practice

### Proportions

- 1. NUTRITION** One ounce of cheddar cheese contains 9 grams of fat. Six of the grams of fat are saturated fats. Find the ratio of saturated fats to total fat in an ounce of cheese.
- 2. FARMING** The ratio of goats to sheep at a university research farm is 4:7. The number of sheep at the farm is 28. What is the number of goats?
- 3. ART** Edward Hopper's oil on canvas painting *Nighthawks* has a length of 60 inches and a width of 30 inches. A print of the original has a length of 2.5 inches. What is the width of the print?

Solve each proportion.

$$4. \frac{5}{8} = \frac{x}{12}$$

$$5. \frac{x}{1.12} = \frac{1}{5}$$

$$6. \frac{6x}{27} = \frac{4}{3}$$

$$7. \frac{x+2}{3} = \frac{8}{9}$$

$$8. \frac{3x-5}{4} = \frac{-5}{7}$$

$$9. \frac{x-2}{4} = \frac{x+4}{2}$$

Find the measures of the sides of each triangle.

- 10.** The ratio of the measures of the sides of a triangle is 3:4:6, and its perimeter is 104 feet.
- 11.** The ratio of the measures of the sides of a triangle is 7:9:12, and its perimeter is 84 inches.
- 12.** The ratio of the measures of the sides of a triangle is 6:7:9, and its perimeter is 77 centimeters.

Find the measures of the angles in each triangle.

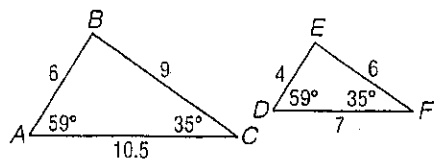
- 13.** The ratio of the measures of the angles is 4:5:6.
- 14.** The ratio of the measures of the angles is 5:7:8.
- 15. BRIDGES** The span of the Benjamin Franklin suspension bridge in Philadelphia, Pennsylvania, is 1750 feet. A model of the bridge has a span of 42 inches. What is the ratio of the span of the model to the span of the actual Benjamin Franklin Bridge?

# 6-2 Skills Practice

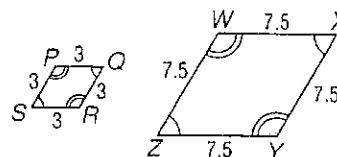
## Similar Polygons

Determine whether each pair of figures is similar. Justify your answer.

1.

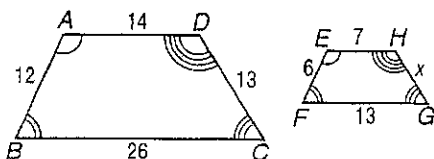


2.

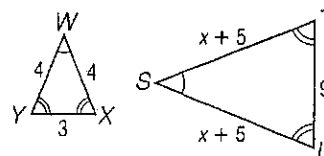


Each pair of polygons is similar. Write a similarity statement, and find  $x$ , the measure(s) of the indicated side(s), and the scale factor.

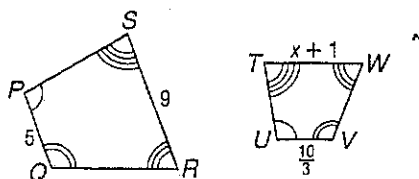
3.  $\overline{GH}$



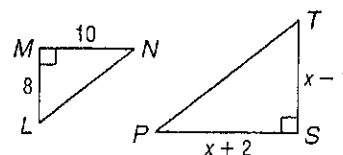
4.  $\overline{ST}$  and  $\overline{SU}$



5.  $\overline{WT}$



6.  $\overline{TS}$  and  $\overline{SP}$

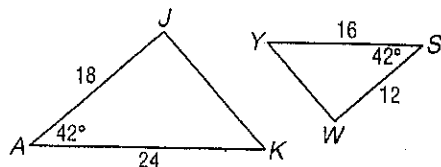


# 6-3 Practice

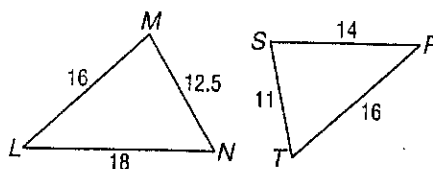
## Similar Triangles

Determine whether each pair of triangles is similar. Justify your answer.

1.

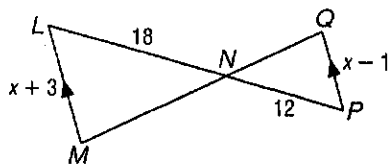


2.

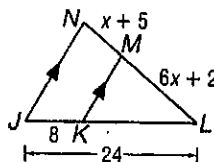


**ALGEBRA** Identify the similar triangles, and find  $x$  and the measures of the indicated sides.

3.  $\overline{LM}$  and  $\overline{QP}$

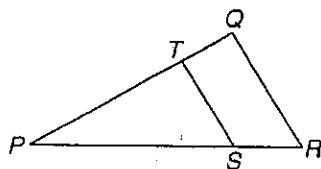


4.  $\overline{NL}$  and  $\overline{ML}$

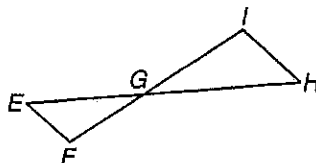


Use the given information to find each measure.

5. If  $\overline{TS} \parallel \overline{QR}$ ,  $TS = 6$ ,  $PS = x + 7$ ,  $QR = 8$ , and  $SR = x - 1$ , find  $PS$  and  $PR$ .



6. If  $\overline{EF} \parallel \overline{HI}$ ,  $EF = 3$ ,  $EG = x + 1$ ,  $HI = 4$ , and  $HG = x + 3$ , find  $EG$  and  $HG$ .



**INDIRECT MEASUREMENT** For Exercises 7 and 8, use the following information.

A lighthouse casts a 128-foot shadow. A nearby lamppost that measures 5 feet 3 inches casts an 8-foot shadow.

7. Write a proportion that can be used to determine the height of the lighthouse.

8. What is the height of the lighthouse?